

In The Claims:

Please cancel claims 29-34 without prejudice and subject to Applicants' right to prosecute all canceled subject matter in related applications, and add new claims 35-57, so that the claims hereafter read as follows:

1. - 28. (Canceled)

29. - 34. (Canceled)

35. (New) A system comprising:

a hollow tube having a distal end, a proximal end, and a lumen extending between the distal end and the proximal end;
at least a portion of the tube comprising a porous membrane;
and

an oxygenated fluorocarbon solution incorporated in the porous membrane;

wherein the porous membrane has a porosity in the range of 20-200 microns, in order that:

(i) the oxygenated fluorocarbon solution is effectively incorporated into the porous membrane; and

(ii) when the porous membrane is positioned in blood, the oxygenated fluorocarbon solution elutes out of the porous membrane, with the elution of the oxygenated fluorocarbon solution into the blood varying between minutes and several hours, depending on the temperature of the environment.

36. (New) A system according to claim 35 wherein at least a portion of the porous membrane is located within the hollow tube.

37. (New) A system according to claim 35 wherein at least a portion of the porous membrane is located on an outer surface of the hollow tube.

38. (New) A system according to claim 35 wherein the hollow tube and the porous membrane are configured so that liquid may pass through the porous membrane as it exits and enters the lumen.

39. (New) A system according to claim 35 wherein the hollow tube comprises an inflatable balloon.

40. (New) A system according to claim 39 wherein the porous membrane is mounted to a surface of the balloon.

41. (New) A system according to claim 39 wherein the hollow tube and inflatable balloon are in the form of a balloon catheter.

42. (New) A system according to claim 39 further comprising a removable housing disposed around the porous membrane.

43. (New) A system according to claim 35 wherein the hollow tube further comprises a plurality of holes formed in the sidewall of the hollow tube and communicating with the lumen of the hollow tube, and further wherein the porous membrane is disposed adjacent to the plurality of holes.

44. (New) A system according to claim 35 wherein the system further comprises a coronary wire.

45. (New) A system according to claim 44 wherein a tip of the coronary wire comprises a porous membrane, wherein an oxygenated fluorocarbon solution is incorporated in the porous membrane, and further wherein the porous membrane has a porosity in the range of 20-200 microns, in order that:

(i) the oxygenated fluorocarbon solution is effectively incorporated into the porous membrane; and

(ii) when the porous membrane is positioned in blood, the oxygenated fluorocarbon solution elutes out of the porous membrane, with the elution of the oxygenated fluorocarbon solution into the blood varying between minutes and several hours, depending on the temperature of the environment.

46. (New) A system according to claim 44 wherein the coronary wire further comprises an ionizing radiation source.

47. (New) A system according to claim 46 wherein the ionizing radiation source comprises a beta-particle emitter.

48. (New) A system according to claim 44 wherein the coronary wire further comprises an ultraviolet light source.

49. (New) A system according to claim 35 wherein the porous membrane comprises a porous polymer.

50. (New) A system according to claim 49 wherein the porous polymer is selected from the group consisting of Teflon,

polyethylene, polyethylene terephthalate, nylon, silicon, and cellulose acetate.

51. (New) A system according to claim 35 wherein the porous membrane is lipophilic.

52. (New) A system according to claim 35 wherein the system further comprises a housing for protectively covering the porous membrane in order to prevent the loss of the oxygenated fluorocarbon solution and/or oxygen.

53. (New) A system according to claim 35 wherein the system further comprises a fluid for passage through the lumen, and further wherein the fluid is at a temperature of between about 0°C and about 50°C.

54. (New) A system according to claim 35 wherein the hollow tube further comprises a stent.

55. (New) A system according to claim 35 wherein the lumen of the hollow tube is configured to modulate release kinetics of the oxygenated fluorocarbon solution by enabling fluid injection at temperatures between about 0°C and about 50°C.

56. (New) A system comprising:
a coronary wire;
at least a portion of the coronary wire comprising a porous membrane; and
an oxygenated fluorocarbon solution incorporated in the porous membrane;

wherein the porous membrane has a porosity in the range of 20-200 microns, in order that:

(i) the oxygenated fluorocarbon solution is effectively incorporated into the porous membrane; and

(ii) when the porous membrane is positioned in blood, the oxygenated fluorocarbon solution elutes out of the porous membrane, with the elution of the oxygenated fluorocarbon solution into the blood varying between minutes and several hours, depending on the temperature of the environment.

57. (New) A method for treating a patient, comprising: providing:

(i) a hollow tube having a distal end, a proximal end, and a lumen extending between the distal end and the proximal end, at least a portion of the tube comprising a porous membrane; and

(ii) an oxygenated fluorocarbon solution;
loading the oxygenated fluorocarbon solution into the porous membrane; and

positioning the tube in the vascular system of the patient so that porous membrane is exposed to blood;

wherein the porous membrane has a porosity in the range of 20-200 microns, in order that:

(i) the oxygenated fluorocarbon solution is effectively incorporated into the porous membrane; and

(ii) when the porous membrane is positioned in blood, the oxygenated fluorocarbon solution elutes out of the porous membrane, with the elution of the oxygenated fluorocarbon solution into the blood varying between minutes and several hours, depending on the temperature of the environment.